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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/339,616	06/24/99	ALLEN	M 1009.004CIP

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EXAMINER

VO.T

ART UNIT

PAPER NUMBER

2821

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/339,616

Applicant(s)

MARK ALLEN

Examiner

Tuyet Vo

Group Art Unit

2821



☒ Responsive to communication(s) filed on 01/04/2000.

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1035 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-9 and 11-28 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-9 and 11-28 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 3, 8

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

1. Acknowledgment is made of the receipt of Amendment filed 04 January 1999 which requested cancellation claim 10 and amended claims 1, 3, 9, 14, 19, 20, 22, 24, 25 and 28.
2. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Remarks

3. Applicant was noted that the drawings have been objected by Notice of Draftperson's Patent Drawing Review and agreed to submit formal drawings as receiving notice of allowable subject matter.

CLAIM REJECTIONS

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. Claims 1-3, 9, 14-16, 25 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamuro (US Pat. 5,941,626).

Yamuro discloses in Fig. 1B an electronic circuit powering a predetermined number (6) of

light emitting diodes (4) electrically coupled in series to form plurality of series blocks (4,5) in parallel, wherein the first LED and the last LED in one series block directly coupled to intermediate of pair of wires which are electrically connected to an alternating current power supply (9) by connectors (2, 3), the LEDs in series blocks are connected in polarity thereby providing for coupling of multiple light strings in an end-to-end straight arrangement relatively to a wire axis, whereas there are approximately 50 LEDs in series block are uniformly spaced apart (Fig. 1B) (col. 3, lines 10-45).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior arts are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4, 6-8 and 21-24 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Yamuro in view of Reymond (US Pat. 5,936,599).

Yamuro discloses substantially the claimed invention as noted above. However, Yamuro does not teach an electrical power supply provides alternating current having an alternating current voltage in the range of about 110V- 220V operated in at least 50 Hz. Reymond discloses an electronic apparatus for AC powered light emitting diode comprising an AC power source of 120 V at 60 Hz supplied to the LEDs load.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the wide range power source taught by Reymond into the Yamuro's lighting circuit for improving of adaptable capability with widespread standard power supplies.

Since human eyes perceive lighting as continuous for a light that emits at frequency above

4Hz, therefore, lighting emitted from LEDs which operate with a frequency about 60Hz definitely not being noticed by human eye as discontinuous lighting.

Even though, neither Yamuro nor Raymond discloses the number of LEDs in a series block is 100. The quantity of LEDs represented as a load are obvious a design choice to one having ordinary skill in the art, since they involved only routine skill in the art. In particular, an AC electric power source supplies 110V to operate 50 LEDs in series block, then it is obvious that an 100 LEDs in series block would be operated safely with AC voltage supply source of 220 V for the same type of LED.

8. Claims 11,12, 17 and 18 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Yamuro.

Yamuro discloses substantial the claimed invention as noted above. However, Yamaru does not teach as following:

- LEDs in each series block are either of the same colors or of different colors in random or non random order,
- the length relative to the LEDs blocks are spaced either uniformly or not in either a periodic of pseudo-random arrangement,

Colorful LEDs coupling in the above manner for aesthetical purpose are obvious a design choice to one having ordinary skill in the art, since the arrangement of LEDs having different colors in any pattern involves only routine skill in the art.

9. Claim 5 is rejected under 35 U.S.C. 103 (a) as being unpatentable Yamuro in view of Raymond.

Yamuro in view of Raymond discloses substantially the claimed invention as noted above except that each LED has a p-n defining a break down voltage above which voltage applied in reverse bias the p-n junction break down, and in which light string having the alternating current voltage is less than the break down voltage. Applying a reverse bias voltage across each LED into the p-n junction of a LED less than the break down voltage

of LED is obvious an expedient of one having ordinary skill in the art, since it ensures a current through diodes in an operating region called a forward current which must have its peak voltage safely below breakdown voltage or manufacturer 's rating, otherwise, the significant reverse current entered from the cathode to the anode of the diode at the AC power supply above a break down voltage will destroy the diode device due to undesired heat generated from that unlimited current.

10. Claims 13 and 28 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Yamuro in view of Frohardt et al. (US Pat. 3,758,771), hereinafter Frohardt.

Yamuro discloses substantially the claimed invention in claims 1 and 11 as noted above. However, Yamuro does not teach a lossy fiber optic rod having a diameter equal to a diameter of a corresponding LED lens within a fiber house for creating an optical icicle feature. Frohardt discloses Fig. 2 an illuminated wig using bundles of optical fibers (30) conduct illumination of a light emitting diode (16) within the house (32). Even though, Frohardt does not teach the a lossy fiber optic rod having a diameter equal to a diameter of a corresponding LED lens, Frohardt's invention does not limit the length, size, shape, type and material in using optical fibers (col. 3, lines 1- 47), therefore it is an obvious design choice to one having ordinary skill in the art at the time the invention was made to facilitate Frohardt's teaching into Yamuro's apparatus by selecting the size, material of optical fibers such as a fiber optic rod type caused loss or diffusing the transmitting light or one large enough for transferring completely one LED light for particular application, such selection or making of use is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

11. Claims 19 and 20 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Yamuro in view of Chang et al. (US Pat. 5,887,967), hereinafter Chang.

As noted above, Yamuro teaches every feature of the claimed invention except for the particular mounting structure of which a keyed offset such as defined in claim 19 and 20. Chang

teaches a mounting structure with a keyed offset to ensure proper alignment between a bulb holder and the base of the bulb.

To prevent incorrect insertion of the bulbs, one of ordinary skill in the art would have considered it obvious to improve the mounting structure of Yamuro's light bulbs with Chang's alignment system. In doing so, proper operation of the lighting system is a guarantee.

Applicant's argument asserting the differences between the claimed invention and Raymond and Tong has been thoroughly considered but is now moot in light of the new ground of rejection.

The argument asserting the differences between the claimed invention and Chang is disagreed. In particular, applicant alleges that the dint in Chang fails to assure a correct alignment in the same manner as claimed. In supporting this argument, the dint in Chang has been alluded as being formed for mere visual alignment without encountering the possibility of human error. This argument has not been found to persuasive in view of the following.

Much like the keyed offset as defined by the claimed invention, the dint (21, 31) and lead (41) in Chang do prevent incorrect insertion of the bulb into the base holder. Even though Chang does not specifically mention that such an alignment mechanism would ensure correct polarity, nonetheless it is implied that incorrect insertion of the light bulb into the holder would render the light system inoperative (col. 2, lines 1-14). Based upon the strict insertion requirement, matching polarity between the holder and the base upon insertion is an implicit feature found in Chang.

Citation of pertinent prior art

12. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

Rapisarda (US Pat. 5,649,755) discloses elongated, decorative, flexible light-transmitting assembly.

James et al. (US Pat. 4,420,251) disclose an optical deformation sensor.

Yeh (US Pat. 5,639,157) discloses a decorative string lighting system.

Hayashi et al. (US Pat. 3,950,738) disclose a semi-conductor-volatile optical memory device.

Chen (US Pat. 5,962,971) discloses LED structure with ultraviolet-light emission chip and multilayered resins to generate various colored lights.

CONCLUSION

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this Office Action from the examiner should be directed to Examiner Tuyet Vo whose telephone number is (703) 306-5497.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Papers related to Group Art Unit 2821 applications only may be submitted to Group Art Unit 2821 by facsimile transmission. Any transmission not to be considered an official response

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must be clearly marked "DRAFT."

The Group 2810 Fax Center number is (703) 308-7722.




Tuyet Vo

Examiner

Art Unit 2821

March 6, 2000



Don Wong
Supervisory Patent Examiner
Technology Center 2800